

LAKE SIDE WATER ASSOCIATION (PWSNO 1280110) SOURCE WATER ASSESSMENT REPORT

September 19, 2001



State of Idaho Department of Environmental Quality

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Source Water Assessment for Lakeside Water Association

Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000-foot radius around your well, sensitivity factors associated with the well's construction and characteristics associated with either your aquifer or the watershed in which you live.

This report, *Source Water Assessment for Lakeside Water Association* describes the public drinking water source, the potential contaminant sites located within a 1000-foot boundary around the well, and the susceptibility (risk) that may be associated with any potential contaminants. This assessment, taken into account with local knowledge and concerns, should be used as a planning tool to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

Potential Contaminant Inventory.

Lakeside Water Association, located on the west side of Coeur d'Alene Lake near Conkling Park, gets its drinking water from an 86-foot deep well drilled in 1965 in a fractured basalt formation. Potential contaminant sites documented inside the 1000-foot boundary around the well include roads, surface water, a boat storage area and septic systems serving year round and summer homes. The water system has been plagued with persistent Coliform bacteria contamination. Nitrate tests run annually since 1995 show fluctuating concentrations ranging between 1.13 and 2.01 mg/l. The Maximum Contaminant Level for nitrate is 10 mg/l. The water is not treated before distribution.

The map in this report shows the well location, the 1000-foot boundary around the well and potential contaminant sites inside the boundary. Table 1 is keyed to the map and summarizes additional information about the potential contaminant sites.

Table 1. Lakeside Water Association Potential Contaminant Inventory

Map ID	Site Description	Source of Information	Potential Contaminants
1	Roads	USGS MAP	IOC, VOC, SOC, Microbial
2	Surface Water	USGS MAP	Microbial
3	Boat Storage	Enhanced Inventory	SOC, VOC
4	Septic Systems	PWS File	IOC, Microbial

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Well Construction and Hydrogeologic Sensitivity.

Construction details for the Lakeside Water Association well were reported in a 1979 Sanitary Survey, but no well log is on file. The well is 86 feet deep with a 8 inch casing that terminates 62 feet below ground surface in a layer of mixed basalt, rock and soil. The well is about 265 feet from Coeur d'Alene Lake and is outside in the 100-year flood plain. The casing extends about 2 feet above the ground, protecting the well from surface runoff. Soils in the 1000-foot zone around the well are generally moderately to well drained. The most recent sanitary survey of the system indicates that the wellhead and surface seal are properly maintained. The worksheet on page 5 of this report shows how your well was scored on the susceptibility criteria used for assessing contamination risk.

Susceptibility.

The Lakeside Water Association well automatically ranked highly susceptible to microbial contamination based on the system's water sampling history. Susceptibility to contamination from organic (SOC, VOC) and inorganic chemical compounds is moderate, mostly because of construction factors and natural geologic characteristics specific to the site where it was drilled. The Susceptibility Analysis Worksheet shows formulas used to determine final scores for the well, and the susceptibility ranking categories.

Protection Measures.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Source water protection activities for Lakeside Water Association should focus first on bringing the well into compliance with Idaho Rules for Public Water Systems. The 1997 Sanitary Survey of the system suggests four alternatives for dealing with the persistent microbial contamination:

1. Install continuous chlorination on the source with contact time.
2. Abandon the well in favor of a new approved source.
3. Connect to an approved source.
4. Demonstrate remediation of the well.

More general protection measures might include periodic inspections of the sanitary setback zone to ensure that surface water runoff remains diverted away from the well. Homeowners in the 1000-foot boundary zone can be asked to participate in septic tank maintenance workshops to learn how to prevent microbial and nitrate contamination of the ground water. Another public education and participation activity could be household hazardous material collections. Because Lakeside doesn't have jurisdiction over the entire 1000-foot zone around the well, partnerships with neighbors should be formed to regulate activities that could degrade the ground water. Lakeside should identify potential emergency situations that could affect ground water and work out response procedures. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

Assistance.

Public water suppliers and users may call the following IDEQ offices with questions about this assessment and to request help with drinking water protection planning.

Coeur d'Alene Regional DEQ Office (208) 769-1422

State IDEQ Office (208) 373-0502

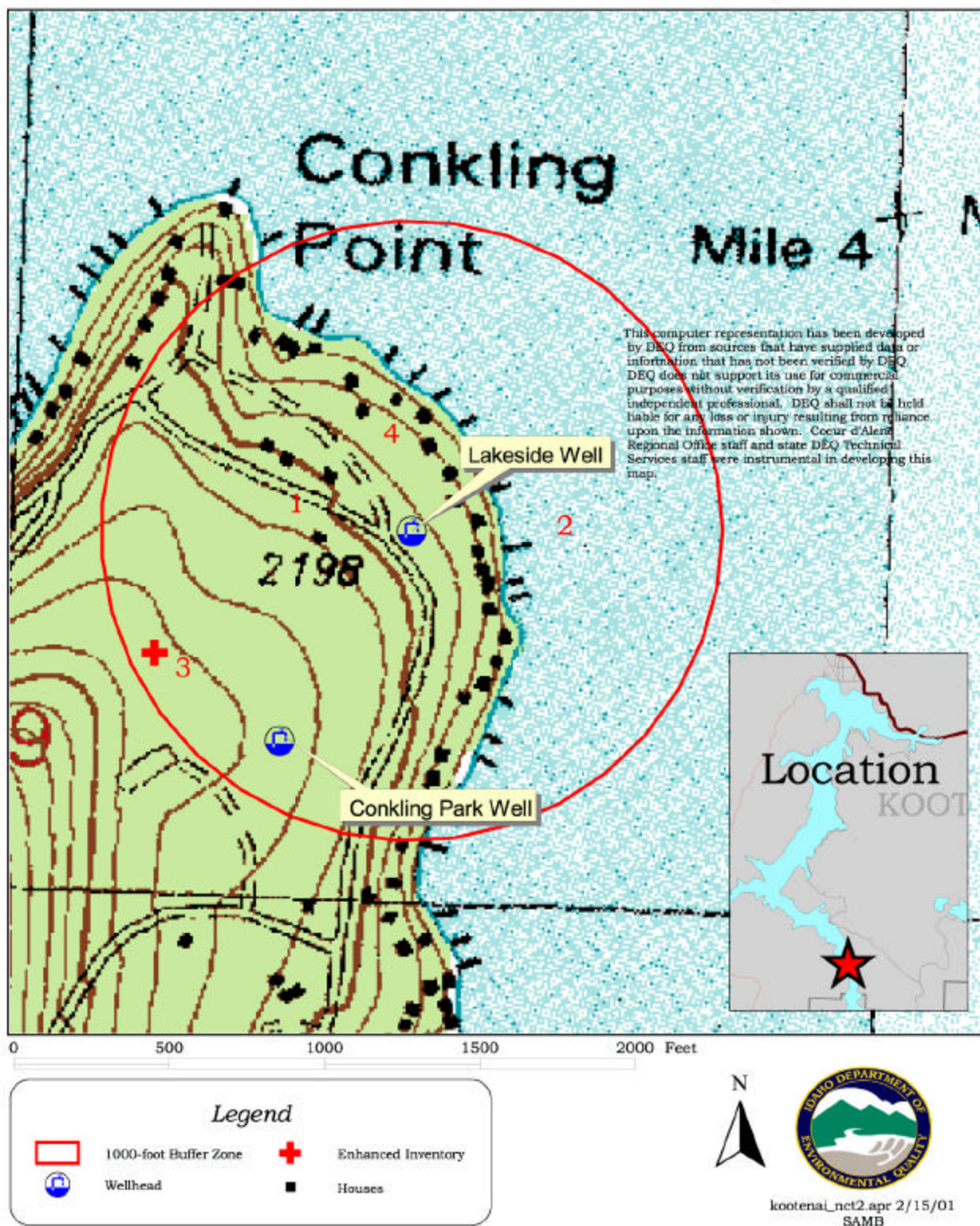
DEQ Website: www.deq.state.id.us

Water suppliers serving fewer than 10,000 persons may contact Melinda Harper of the Idaho Rural Water Association (208) 343-7001 for assistance with drinking water protection strategies.

Idaho Rural Water Association Website: www.idahoruralwater.com

Home * A * Syst Website: www.uwex.edu/homeasyst

Figure 1. Lakeside Water Association. Delineation and Contaminant Inventory.



Ground Water Susceptibility Worksheet

Public Water System Name :

LAKESIDE WATER ASSN

Well :

WELL #1

Public Water System Number :

1280110

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1. System Construction		SCORE			
Drill Date	1965				
Driller Log Available	NO. Construction Information from 1979	Sanitary Survey			
Sanitary Survey (if yes, indicate date of last survey)	YES	1997			
Well meets IDWR construction standards	UNKNOWN	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	YES	0			
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		6			
3. Potential Contaminant / Land Use - SANITARY SETBACK		IOC	VOC	SOC	Microbial
		Score	Score	Score	Score
Land Use Sanitary Setback	RANGELAND, WOODLAND,	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Sanitary Setback	YES	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Sanitary Setback		0	0	0	High*
Potential Contaminant / Land Use - 1000-FOOT BOUNDARY					
Contaminant sources present (Number of Sources)	YES	2	2	2	3
(Score = # Sources X 2) 8 Points Maximum		4	4	4	6
Sources of Class II or III leacheable contaminants or Microbials	YES	2	2	2	
4 Points Maximum		2	2	2	
1000-Foot Boundary contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use 1000-Foot Boundary	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - 1000-Foot Boundary		6	6	6	6
Cumulative Potential Contaminant / Land Use Score		6	6	6	6
4. Final Susceptibility Source Score		12	12	12	12
5. Final Well Ranking		Moderate	Moderate	Moderate	High*

*Automatically ranked highly susceptible to microbial contamination based on water sampling history.

The final scores for the susceptibility analysis were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)

2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Ranking:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

> 13 High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as “Superfund” is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.